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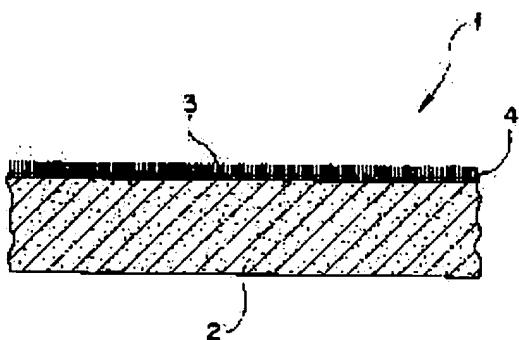
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(54) STRETCHABLE FLOCKED SHEET MATERIAL, AND PROTECTIVE CLOTHING AND ACCESSORY FOR SPORTS USING THE SAME

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a stretchable elastic sheet material wherein the stretchability, which is possessed by a base material itself comprising a stretchable flexible and elastic sheet, is sufficiently put to practical use, and protective clothing and an accessory for sports using the same.

SOLUTION: Staple fibers (3) comprising nylon or polyester are bonded to either one of the surfaces of an elastic sheet (2), which comprises a foamable chloroprene rubber and becomes the base material of a flexible and stretchable sheet material having waterproofness, in an erected state by an adhesive (4) to form a stretchable flocked sheet material (1). The stretchable flocked sheet material (1) is wholly or partially used to constitute protective clothing for sports such as a wet suit or the like or an accessory for sports such as a glove, a pad or the like.



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CLAIMS

[Claim(s)]

[Claim 1] The elasticity hair transplantation web material characterized by the thing in the elastic sheet object which can be expanded and contracted [that it is flexible and] which it comes to stick a staple fiber in the state of standing up on the surface of either at least.

[Claim 2] A staple fiber is an elasticity hair transplantation web material according to claim 1 characterized by being the die length which can stand up according to an electrostatic phenomenon.

[Claim 3] The elasticity hair transplantation web material according to claim 1 or 2 characterized by coming to stick the knitting fabric in which the telescopic motion to the direction in every direction is possible on the top face of another side on which the staple fiber in said elastic sheet object is not stuck.

[Claim 4] The elasticity hair transplantation web material according to claim 1 or 2 characterized by coming to apply smoothability resin to the top face of another side on which the staple fiber in said elastic sheet object is not stuck.

[Claim 5] Personal protective equipment for movement characterized by coming to form using an elasticity hair transplantation web material given in any [said claim 1 thru/or] of 4 they are.

[Claim 6] Said elasticity hair transplantation web material is personal protective equipment for movement according to claim 5 characterized by coming to be arranged at the part elongated at least by the expansion-and-contraction actuation at the time of wearing.

[Claim 7] The accessory for movement characterized by forming and becoming so that the part which will be elongated in movement may be partially covered using an elasticity hair transplantation web material given in any [said claim 1 thru/or] of 4 they are.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] The invention in this application relates to the accessory for movement at the personal-protective-equipment list for movement using the elastic sheet object and this which can be expanded and contracted [that it is flexible and]. In detail The personal protective equipment for movement formed using the elastic sheet object which can be expanded and contracted [that it is flexible and] like a wet suit or a dry suit, It is related with the accessory for movement at the elastic web material of elasticity which was suitable as a material of accessories for movement, such as a globe as the related supply, and a pad or a supporter, and the personal-protective-equipment list for movement using this.

[0002]

[Description of the Prior Art] As a material which it comes to use for accessories for movement, such as personal protective equipment for movement, such as a wet suit and a dry suit, a globe as the related supply, and a pad or a supporter The elastic sheet object possible [telescopic motion] and flexible which consists of chloroprene rubber, other fizz rubber, etc. is used as a base material. By sticking on the one side or both sides the knitting fabric which performed like jersey proper coloring in which the telescopic motion to the direction in every direction is possible, and the -izing[pile]-less **** knitting fabric the telescopic motion to the direction in every direction is made to become with advanced elongation percentage if needed While canceling the fall of the reinforcement by attachment and detachment by rubbing so that this base material may be caught in contact with the direct skin carrying out, and wearing out hardness and the front face of this base material, what raised heat retaining property and fanciness is known.

[0003]

[Problem(s) to be Solved by the Invention] However, when knitting fabrics, such as jersey, and a -izing [pile]-less **** knitting fabric are stuck on one side or both sides of the elastic sheet object used as a base material While surely the frictional resistance of this base material and the skin decreasing and becoming easy to carry out wearing of the personal protective equipment for movement, and the accessory for movement Are protected so that the front face of this base material may not be exposed, a strong fall is controlled, and further, although heat retaining property and fanciness will be raised since the thickness of the goods formed using this base material increases or it becomes possible to give free color Although each above-mentioned knitting fabric stuck on the front face of this base material is [how] elastic, it has a limitation in the degree of elongation as compared with this base material that consists of an elastic sheet object, and it will produce the fault of checking own elasticity of a base material on the contrary, and being hard coming to move.

[0004] Namely, although knitting fabrics, such as jersey, and a -izing[pile]-less **** knitting fabric are what was rich in the elasticity to the direction in every direction Since it is the knitting fabric which knit the fiber (yarn) which has a limitation in the degree of elongation also in any, When it cannot deny, but both are stuck and it considers as one, that it is what is inferior in the degree of elongation as compared

with the base material which consists of an elastic sheet object From the reaction (shrinkage force) over elongation of this knitting fabric overcoming the extensibility of this base material, and controlling the elongation as the degree of elongation increases The narrow feeling which is on the contrary hard to move in wearing will be given, and the elasticity which this base material itself has should fully be employed efficiently. And such a fault is remarkable when this knitting fabric is stuck on both sides of this base material.

[0005] Moreover, temperature is taken with the absorbed moisture and knitting fabrics, such as jersey, also have the fault that heat retaining property will fall while a water break will absorb moisture so much bad and will become heavy.

[0006]

[Means for Solving the Problem] That this technical problem should be solved, as a result of an invention-in-this-application person's inquiring wholeheartedly, then, by sticking the fiber knit on the front face of the base material which consists of an elastic sheet object, and considering as this base material and one By forming the personal protective equipment for movement, and the accessory for movement using this by considering as the hair transplantation web material of the elasticity which does not spoil the original elasticity which the base material which consists of an elastic sheet object has While covering the front face of the elastic sheet object as a base material for fiber and making it frictional resistance with the skin decrease We decided to constitute so that heat retaining property may be raised and fanciness may be raised by giving color of arbitration further to the aesthetic property and this fiber by attachment of the fiber knit.

[0007] The invention in this application considers as the hair transplantation web material of the elasticity which comes to stick a staple fiber in the state of standing up on the surface of either at least in the elastic sheet object which can be expanded and contracted [that it is flexible and]. Namely, by this The elastic sheet object which is a base material, and the staple fiber which is fiber which is stuck on the front face, and which is knit Since it will be combined only at the die-length direction end edge of this staple fiber, it will unify, this staple fiber itself develops in connection with this also as elongating this base material and elongation of this base material is not controlled, affecting the elasticity which this base material itself has in any way is lost.

[0008] Here, the staple fiber as used in the field of the invention in this application means the thing of the die length which can stand up according to an electrostatic phenomenon, and the fiber waste which is specifically the thing of the powdered or grinding fiber 2mm or less near this especially about, and is called the so-called "flocks." By this, by the so-called electrostatic-flocking means, a staple fiber will be perpendicularly stuck on the front face of the elastic sheet object which is the base material which applied adhesives beforehand, as hair was transplanted. In addition, although the thickness of the elastic sheet object which a staple fiber will stand up and will be stuck perpendicularly is not limited especially since it can choose suitably according to the personal protective equipment for movement and the accessory for movement which are made into the purpose, it is good to consider as the thickness of about 1-6mm about in consideration of the ease of elongating of this elastic sheet object in accordance with movement actuation.

[0009] The invention in this application on moreover, the top face of another side on which the staple fiber in said elastic sheet object is not stuck It considers as the hair transplantation web material of the elasticity which comes to stick knitting fabrics, such as jersey in which the telescopic motion to the direction in every direction is possible, and a -izing[pile]-less **** knitting fabric. By this While the thickness of this hair transplantation web material increases and heat retaining property is raised by sticking fiber on front flesh-side both sides of this base material Since the knit fiber is only any or one side even if fanciness will be raised by the color of the arbitration given to the aesthetic property and these knitting fabrics by the knitting fabric, such as stuck jersey, and fiber is further stuck on front flesh-side both sides of this base material, the elongation is not controlled remarkably.

[0010] The invention in this application considers as the hair transplantation web material of the elasticity which comes to apply smoothability resin, such as polyurethane, to the top face of another side on which the staple fiber in said elastic sheet object is not stuck. Moreover, by this Since a knitting

fabric etc. is not stuck on the top face of another side and this smoothability resin is applied to the front face of this base material not to mention the elongation not being controlled remarkably, even if the field of this another side touches with the direct skin, it rubs so that this base material and the skin may be caught, and there are nothings and it becomes easy to slide.

[0011] moreover, the invention in this application -- the above -- the hair transplantation web material of which elasticity -- that is The hair transplantation web material which comes to stick a staple fiber on one front face of the base materials which can be expanded and contracted [that it is flexible and] in the state of standing up, While sticking a staple fiber on either front face of the hair transplantation web material which comes to stick this staple fiber on front flesh-side both sides of this base material in the state of standing up, and this base material in the state of standing up While sticking a staple fiber on either front face of the hair transplantation web material which comes to stick knitting fabrics, such as jersey in which the telescopic motion to the direction in every direction is possible, or a -izing[pile]-less **** knitting fabric on the surface of another side, and this base material in the state of standing up It comes to form the personal protective equipment for movement, or the accessory for movement, using respectively the hair transplantation web material which comes to apply smoothability resin, such as polyurethane, on the surface of another side.

[0012] And when forming the personal protective equipment for movement, it may be made to constitute the whole using the hair transplantation web material of said elasticity, but you may constitute so that the expansion-and-contraction actuation at the time of wearing will develop at least, for example, the hair transplantation web material of said elasticity may be arranged only at an elbow, a knee, the waist (back), the hips (flesh side of a thigh), and the part of *****. Thereby, even if the hair transplantation web material of said elasticity has been arranged partially, it is lost that expansion-and-contraction actuation is controlled the same with having constituted the whole from a hair transplantation web material of this elasticity.

[0013] In addition, the clothes called the so-called wet suit or so-called dry suit used in extraction of each sport (leisure) in underwater or Minakami called diving, surfing, windsurfing, a hydroski, a bodyboard, and fishing, lifesaving (lifesaver: lifesaver), camera photography and seaweed, shellfish, etc., underwater [other], and many activities [in Minakami] as personal protective equipment for movement meant by the invention in this application can be considered.

[0014] Moreover, when forming the accessory for movement, it is good to constitute so that the part which will be elongated in movement, for example, a finger and an elbow, and a knee may be covered partially. By this, the expansion-and-contraction actuation in movement will not be controlled, and said part which will be elongated will be protected from an impact, friction, etc. And as an accessory for movement, a globe, a hood, a pad or a supporter as a related supply in the above-mentioned personal protective equipment for movement, etc. can be considered.

[0015]

[Example] Hereafter, one example of the invention in this application is explained. The elasticity hair transplantation web material (1) in the invention in this application On any of an elastic sheet object (2) with a thickness of about 3mm it is thin from fizz rubber, such as a chloroprene which serves as a base material of the web material which can be expanded and contracted [that it is flexible and] while having waterproofness, as shown in drawing 1 , or one side It is supposed that a staple fiber (3) with a die length of about 0.7mm which consists of nylon or polyester is stuck in the state of standing up. After desiccation applies to one field of an introduction this elastic sheet object (2) the adhesives (4) which have elasticity by the nonsolvent system (drainage system) which does not have inflammability beforehand. Subsequently By making it move into the hair transplantation equipment which high-pressure static electricity comes to generate, while this is prepared for a staple fiber (3) It is supposed that this staple fiber (3) is perpendicularly stuck on one field of this elastic sheet object (2) in the state of standing up through these adhesives (4) with an electrostatic-frocking means. After ** and others removes the excessive staple fiber (3) which remained without being stuck on one field of this elastic sheet object (2), suppose that it forms by pressing down the front face lightly with a roller.

[0016] The elasticity hair transplantation web material (1) formed as mentioned above Although it can

consider as accessories for movement, such as personal protective equipment for movement, such as a wet suit, and a globe, a pad, by turning a hair transplantation staple fiber side inside, and constituting the whole so that it may touch with the skin when the staple fiber by which standing-up hair transplantation was carried out equips As shown not only in this but in drawing 2, the expansion-and-contraction actuation at the time of wearing will develop at least. For example, you may make it constitute a wet suit (10) by arranging said elasticity hair transplantation web material (1) only into parts, such as the elbow section (15), a knee region (16 16'), a bottom part (17), the back (18), and infra-axillary (19), so that a hair transplantation staple fiber side may turn to the inside.

[0017] in addition, the field it will turn [field] to an outside by arranging said elasticity hair transplantation web material (1) so that a hair transplantation staple fiber side may turn to the inside, i.e., the field of another side of an elastic sheet object (2), -- the skin side of fizz rubber -- you may remain as it is -- it is good also as a slice cut surface which stripped the front face thinly.

[0018] Moreover, a hair transplantation staple fiber side may be made to perform water repellent finishing if needed beforehand in consideration of the water break after said personal protective equipment for movement and the accessory for movement have contained water, or the thing of desiccation in this case.

[0019] Moreover, the elasticity hair transplantation web material in the invention in this application As shown in drawing 3, while sticking a staple fiber (3) on one field of said same elastic sheet object (2) in the state of standing up perpendicularly As it considers as an elasticity hair transplantation web material (11) by sticking perpendicularly the same staple fiber (3) also as the field of another side in the state of standing up or is shown in drawing 4 While sticking a staple fiber (3) on one field of said same elastic sheet object (2) in the state of standing up perpendicularly As it considers as an elasticity hair transplantation web material (21) by sticking on the field of another side knitting fabrics (23), such as jersey in which the telescopic motion to the direction in every direction is possible, or is shown in drawing 5 While sticking a staple fiber (3) on one field of said same elastic sheet object (2) in the state of standing up perpendicularly By sticking a -izing[pile]-less **** knitting fabric (33) on the field of another side, as it is good also as an elasticity hair transplantation web material (31) and is further shown in drawing 6 While sticking a staple fiber (3) on one field of said same elastic sheet object (2) in the state of standing up perpendicularly, it is good also as an elasticity hair transplantation web material (41) by applying smoothability resin (43), such as polyurethane, to the field of another side.

[0020] and the thing for which each elasticity hair transplantation web material formed as mentioned above is constituted on the whole like the above-mentioned elasticity hair transplantation web material (1) -- or the thing arranged partially -- or it can consider as accessories for movement, such as personal protective equipment for movement, such as a variety of wet suits, and a globe, a pad, by choosing a front flesh-side material freely.

[0021]

[Effect of the Invention] To one [at least] field of the elastic sheet object which serves as a base material of the web material which can be expanded and contracted [that it is flexible and] according to the invention in this application as mentioned above while having waterproofness While being easy to carry out attachment and detachment by forming accessories for movement, such as personal protective equipment for movement, such as a wet suit, and a globe, a pad, using the elasticity hair transplantation web material which stuck the staple fiber in the state of standing up It can consider as the personal protective equipment for movement and the accessory for movement which did not check maneuverability and were excellent in heat retaining property.

[0022] And it means that fanciness should be further raised the personal protective equipment for movement with which the hair transplantation staple fiber side of the staple fiber stuck in the state of standing up has been arranged also outside, the accessory for movement, then the aesthetic property peculiar to fiber knit, and by giving color of arbitration to this fiber.

[0023] Moreover, this elasticity hair transplantation web material in the invention in this application Since it will be in the condition that the staple fiber which stood up according to the shape of the toothed lodges partially, and flows around because a staple fiber touches with the skin and becomes

almost flat when it equips Like the knitting fabric which comes to carry out fiber (yarn) the volume on intersection, even if it touches with the skin, it will not be in a flat condition, but there is also no possibility of grinding the skin and hurting one's skin itself with the level difference of the fiber which carried out the volume on intersection on the contrary.

[0024] Furthermore, though this staple fiber will contain water by making one [at least] field of an elastic sheet object into a hair transplantation staple fiber side according to the invention in this application, if it is made to perform water repellent finishing to this hair transplantation staple fiber side beforehand, a water break will be good, will become easy to get dry, and high heat retaining property can be secured.

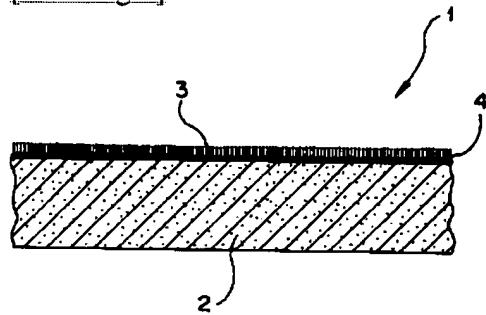
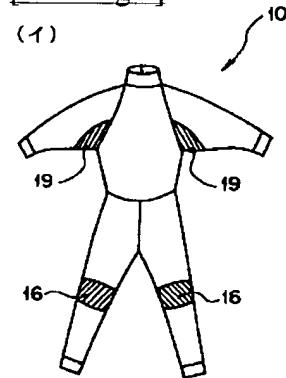
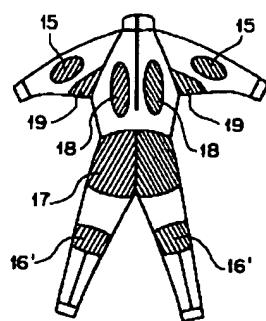
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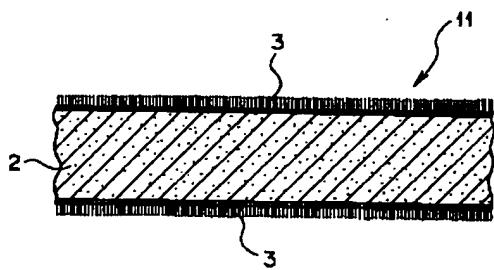
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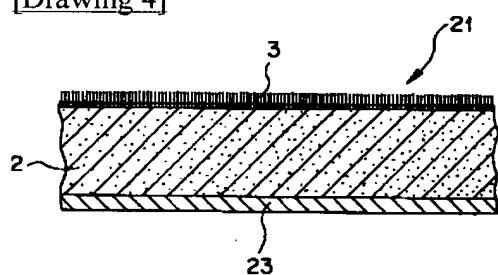
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DRAWINGS

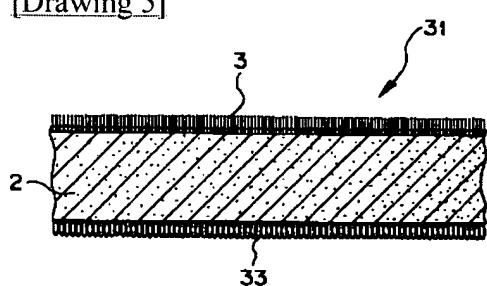
[Drawing 1]**[Drawing 2]****(□)****[Drawing 3]**



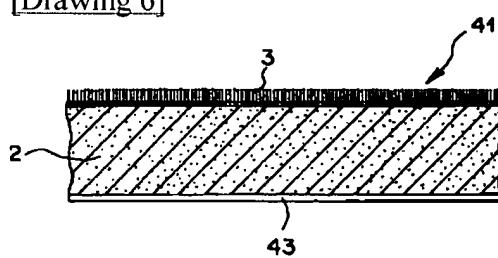
[Drawing 4]



[Drawing 5]



[Drawing 6]



[Translation done.]